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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/943,806	08/30/2001	Andrew D. Bailey III	LAM1P124D1	4355

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BEYER WEAVER & THOMAS LLP
P.O. BOX 778
BERKELEY, CA 94704-0778

EXAMINER	
ALEJANDRO MULERO, LUZ L	

ART UNIT	PAPER NUMBER
1763	

DATE MAILED: 11/14/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/943,806	BAILEY ET AL.	
	Examiner	Art Unit	
	Luz L. Alejandro	1763	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *9/3/03*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *23,26,27,32,33 and 35-44* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *23,26,27,32,33 and 35-44* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 23, 26-27, 32-33, and 35-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Collins et al., EP 0 837 489 A2 in view of Collins, U.S. Patent 6,572,732.

Collins et al. shows the invention substantially as claimed including a method for providing temperature control to a plasma processing chamber of a plasma processing apparatus, the method comprising: directly and indirectly measuring temperature internal to the plasma processing chamber 40 using a temperature sensor 76, for

instance, to measure the temperature of the ceiling 52 and using a temperature sensor 79 to measure the temperature of the ring 62; comparing both of these temperatures to a target temperature (see page 12-line 54 to page 13-line 17); heating the plasma processing chamber by heating a thermal control block 74,75 that is thermally coupled and biased to the plasma processing chamber 40 (see page 13-line 55 to page 14-line 22); cooling the plasma processing chamber 40 by actively cooling the thermal control block 74,75, wherein there are layers (thermal break element) in the block separating the heating element from the cooling element (see Figs. 17A-23); and wherein the thermal control block including the heating and cooling blocks further include notches (1000, 1020, for example) through which gas flows and which prevent RF energy from coupling with the thermal control block (see figs. 18-19).

With respect to claims 24, 34 and 39, note that the heating and cooling are provided through the same thermal control block 74, 75. Regarding claims 25 and 40, note that the thermal control block include at least a heater element 75 and a cooling element 74 and said cooling is provided by the cooling element through the heating element (see figs. 18-19).

Collins et al. fails to expressly disclose a plurality of thermal control blocks. However, a prima facie case of obviousness exists because the duplication of parts have been held to have been obvious (see In re Harza, 274 F.2d 669, 124 USPQ 378 (CCPA 1960)). Furthermore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have a plurality of thermal control blocks in

the apparatus of Collins et al. because this allows for better controllability over the process being conducted in the apparatus.

Collins et al. fails to expressly disclose that the plurality of thermal control blocks are located around the sides of the plasma processing chamber. However, a prima facie case of obviousness exists because the rearrangement of parts have been held to have been obvious (see In re Japikse 86 USPQ 70 (CCPA 1950)). Furthermore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have a plurality of thermal control blocks in the apparatus of Collins et al. because this allows for better controllability over the process being conducted in the apparatus.

Collins et al. does not expressly disclose that the cooling is provided by the cooling element through the heating element. Collins discloses a method for providing temperature control to a plasma processing chamber by which a cooling element 520 cools the chamber through heating element 510 that is in physical contact with a roof (147,400,110) (see figs. 26-29 and their descriptions). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the teachings of Collins et al. as to performing the cooling through the heating element, as taught by Collins because this is a suitable method for controlling the temperature of the plasma chamber. Additionally, the particular arrangement of the cooling and the heating means, which will provide for the cooling through the heating member, would not lend patentability to the instant application absent the showing of unexpected results.

With respect to claim 43, apparatus limitations, unless they affect the process in a manipulative sense, have little weight in process claims. *In re Tarczy-Hornoch* 158 USPQ 141, 150 (CCPA 1968); *In re Edwards* 128 USPQ 387 (CCPA 1961); *Stalego v. Heymes* 120 USPQ 473, 478 (CCPA 1959); *Ex parte Hart* 117 USPQ 193 (PO BdPatApp 1957); *In re Freeman* 44 USPQ 116 (CCPA 1940); *In re Sweeney* 72 USPQ 501 CCPA 1947).

Response to Arguments

Applicant's arguments filed 9/3/03 have been fully considered but they are not persuasive.

Applicant argues that the proposed combination of Collins et al. with Collins is improper because Collins renders Collins et al. inoperable for its intended purpose. The examiner respectfully disagrees since Collins shows an alternative heating arrangement in which a heating element is not provided through lamps but rather is provided through a heater layer 510. Furthermore, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). Concerning applicant's statement that in Collins the chamber is not cooled through the heating element, note that the cooling element 520 is on top of the heating element 510 and therefore in order to control the ceiling

temperature 110 as suggested by Collins the cooling element must cool through the heating element (see col. 21-lines 45-48 of Collins).

With respect to claims 32, 36, 37-42, and 44, a prima facie case of inherency has been established with respect to the notches preventing at least some coupling of the RF energy. The fact that the notches in Collins et al. may be formed in such a way to mitigate or nearly eliminate the reduction in RF coupling is actually proof that the claim by the examiner that some RF coupling would be prevented is accurate. The Collins et al. reference clearly implies that some prevention of the RF coupling would occur.

Concerning applicant's statement that a thermal break element is not shown, note that Collins et al. shows such limitation as stated in the above and previous rejections.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Luz L. Alejandro whose telephone number is 703-305-4545. The examiner can normally be reached on Monday to Thursday from 7:30 to 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory L. Mills can be reached on 703-308-1633. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Luz L. Alejandro
Primary Examiner
Art Unit 1763

November 11, 2003